Environmental Product Declaration

according to ISO 14025 and EN 15804

This declaration is for:

Carbon Black, liquid pigment, Product ISF-Z

Provided by:

Harold Scholz & Co. GmbH



program operator

Stichting MRPI®

publisher

Stichting MRPI®

www.mrpi.nl

MRPI® registration

1.1.00398.2022

date of first issue

16-12-2022

date of this issue

16-12-2022

expiry date

16-12-2027

COMPANY INFORMATION

Harold Scholz & Co. GmbH
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0049 2361 9888-0

https://www.harold-scholz.de/

PRODUCT

Carbon Black, liquid pigment, Product ISF-Z

DECLARED UNIT/FUNCTIONAL UNIT

1 kg

DESCRIPTION OF PRODUCT

Liquid pigment for coloring different materials, such as cement, for application in the construction industry.

VISUAL PRODUCT



MRPI® REGISTRATION

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DATE OF ISSUE

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MORE INFORMATION

https://www.harold-scholz.de/produkte-hs/carbon-black

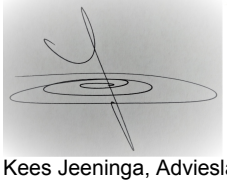
SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by **Anne Kees Jeeninga, Advieslab Vof.**
The LCA study has been done by **Susanne Dunschen, TÜV Rheinland Energy GmbH.**
The certificate is based on an LCA-dossier according to ISO14025 and EN15804+A2/Bepalingsmethode. It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPDs of construction products may not be comparable if they do not comply with EN15804+A2/Bepalingsmethode. Declaration of SVHC that are listed on the 'Candidate List of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

PROGRAM OPERATOR

Stichting MRPI®
Kingsfordweg 151
1043GR
Amsterdam

ir. J-P den Hollander, Managing director MRPI®

DEMONSTRATION OF VERIFICATION
CEN standard EN15804 serves as the core PCR[a]
Independent verification of the declaration and data, according to EN ISO 14025:2010: internal: external: X
Third party verifier:  Anne Kees Jeeninga, Advieslab Vof
[a] PCR = Product Category Rules

DETAILED PRODUCT DESCRIPTION

The liquid pigments/slurries have the predominant purpose to color different materials with mainly cementitious, calcitic or alternative binders for the construction industry but also other binders for color dispersions and coating applications.

COMPONENT > 1% of total mass	[%]
Fresh Water	Confidential
Pigment (Carbon Black)	Confidential
Additives	Confidential

SCOPE AND TYPE

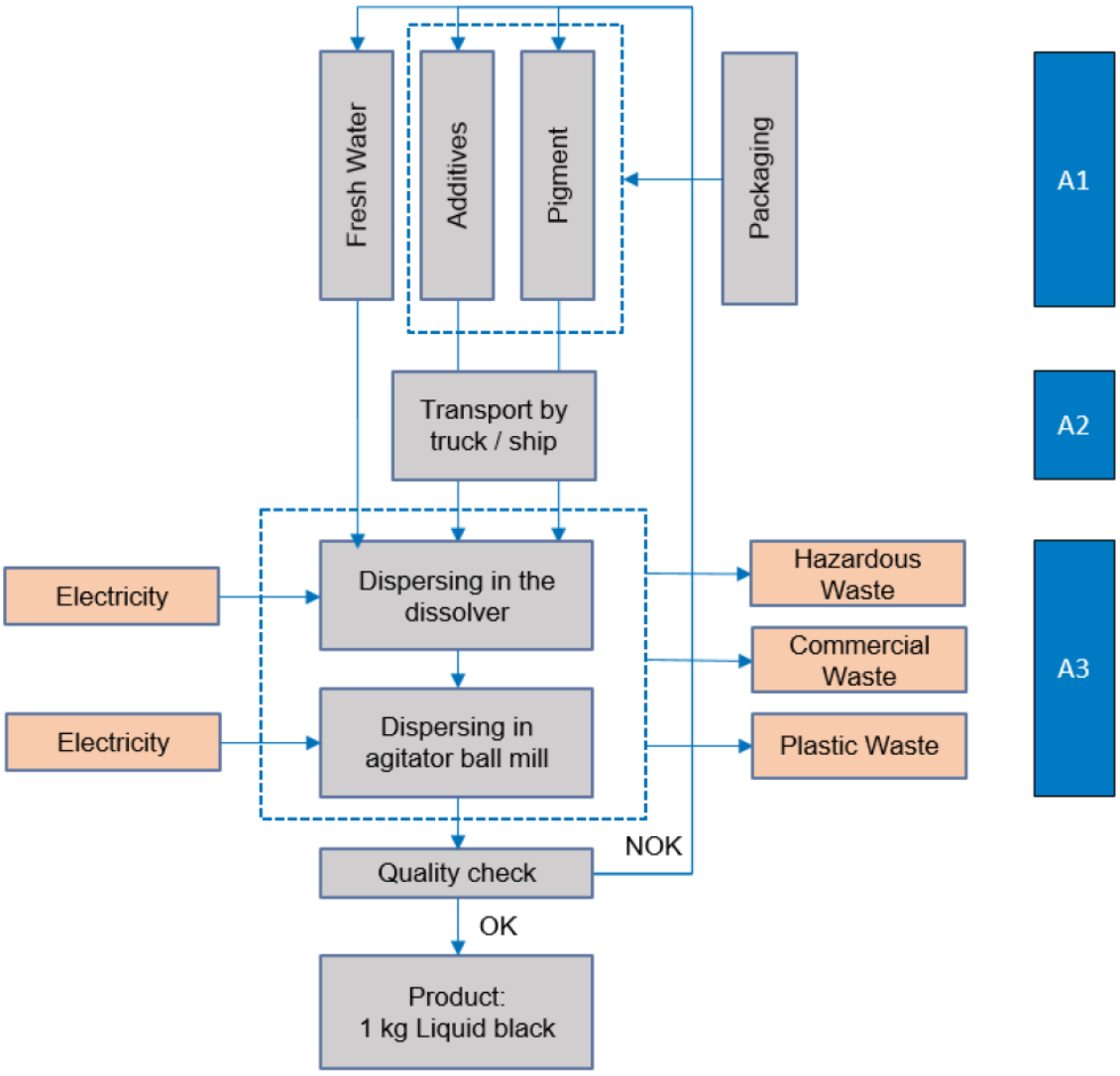
The liquid paint in this EPD is produced at the production location of Harold Scholz in Recklinghausen, Germany. Since the liquid pigments are a semi-finished product, only the production is included in the LCA (A1-A3).

The LCA is compiled using the “NMD Bepalingsmethode Milieuprestatie Bouwwerken v1.0” as PCR, Ecoinvent v3.6 for background processes,SimaPro software. The main impact categories have been calculated with the characterization factors in “EN 15804+A1/ +A2 Method", "EF 3.0" and "SBK Bepalingsmethode - Jan. 2021 (NMD 3.3)".

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery- Recycling- potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

X = Modules Assessed

ND = Not Declared



LCA process diagram according to EN 15804 (7.2.1)

REPRESENTATIVENESS

The EPD at hand represents results for the product ISF-Z, produced by Harold Scholz at their site in Recklinghausen.

ENVIRONMENTAL IMPACT per functional unit or declared unit (indicators A1)

	UNIT	A1	A2	A3	A1-A3
ADPE	kg Sb eq.	1.11E-5	3.83E-6	8.34E-7	1.57E-5
ADPF	MJ	3.21E+1	2.31E+0	1.71E-1	3.46E+1
GWP	kg CO2 eq.	8.52E-1	1.52E-1	2.98E-2	1.03E+0
ODP	kg CFC11 eq.	3.96E-7	2.68E-8	1.70E-9	4.24E-7
POCP	kg ethene eq.	5.05E-4	9.22E-5	1.27E-5	6.10E-4
AP	kg SO2 eq.	4.50E-3	6.94E-4	7.60E-5	5.27E-3
EP	kg (PO4)3- eq.	5.69E-4	1.33E-4	9.63E-6	7.11E-4

Toxicity indicators for Dutch market

HTP	kg DCB eq.	6.66E-1	6.39E-2	8.72E-3	7.39E-1
FAETP	kg DCB eq.	1.21E-2	1.86E-3	2.34E-3	1.62E-2
MAETP	kg DCB eq.	3.65E+1	6.69E+0	5.13E+0	4.83E+1
TETP	kg DCB eq.	7.04E-4	2.25E-4	3.87E-5	9.68E-4
ECI	Euro	1.33E-1	1.84E-2	3.29E-3	1.55E-1
ADPF	kg Sb. eq.	1.55E-2	1.11E-3	8.21E-5	1.66E-2

ADPE = Abiotic Depletion Potential for non-fossil resources
ADPF = Abiotic Depletion Potential for fossil resources
GWP = Global Warming Potential
ODP = Depletion potential of the stratospheric ozone layer
POCP = Formation potential of tropospheric ozone photochemical oxidants
AP = Acidification Potential of land and water
EP = Eutrophication Potential
HTP = Human Toxicity Potential
FAETP = Fresh water aquatic ecotoxicity potential
MAETP = Marine aquatic ecotoxicity potential
TETP = Terrestrial ecotoxicity potential
ECI = Environmental Cost Indicator
ADPF = Abiotic Depletion Potential for fossil resources expressed in [kg Sb-eq.]

ENVIRONMENTAL IMPACT per functional unit or declared unit (core indicators A2)

	UNIT	A1	A2	A3	A1-A3
GWP-total	kg CO2 eq.	8.65E-1	1.53E-1	4.19E-2	1.06E+0
GWP-fossil	kg CO2 eq.	8.65E-1	1.53E-1	3.03E-2	1.05E+0
GWP-biogenic	kg CO2 eq.	3.41E-4	7.24E-5	1.16E-2	1.20E-2
GWP-luluc	kg CO2 eq.	1.92E-4	5.63E-5	1.50E-5	2.63E-4
ODP	kg CFC11 eq.	4.92E-7	3.37E-8	1.72E-9	5.27E-7
AP	mol H+ eq.	5.25E-3	9.19E-4	9.16E-5	6.26E-3
EP-freshwater	kg P eq.	1.22E-5	1.55E-6	9.34E-7	1.47E-5
EP-marine	kg N eq.	6.79E-4	3.17E-4	1.48E-5	1.01E-3
EP-terrestrial	mol N eq.	7.01E-3	3.50E-3	1.67E-4	1.07E-2
POCP	kg NMVOC eq.	2.55E-3	9.97E-4	5.75E-5	3.60E-3
ADP-minerals & metals	kg Sb eq.	9.30E-6	3.83E-6	8.34E-7	1.40E-5
ADP-fossil	MJ, net calorific value	3.28E+1	2.30E+0	1.44E-1	3.52E+1
WDP	m3 world eq. deprived	1.37E-1	8.21E-3	7.38E-3	1.52E-1

GWP-total = Global Warming Potential total
GWP-fossil = Global Warming Potential fossil fuels
GWP-biogenic = Global Warming Potential biogenic
GWP-luluc = Global Warming Potential land use and land use change
ODP = Depletion potential of the stratospheric ozone layer
AP = Acidification Potential, Accumulated Exceedence
EP-freshwater = Eutrophication Potential, fraction of nutrients reaching freshwater end compartment
EP-marine = Eutrophication Potential, fraction of nutrients reaching marine end compartment
EP-terrestrial = Eutrophication Potential, Accumulated Exceedence
POCP = Formation potential of tropospheric ozone photochemical oxidants
ADP-minerals&metals = Abiotic Depletion Potential for non fossil resources [2]
ADP-fossil = Abiotic Depletion for fossil resources potential [2]
WDP = Water (user) deprivation potential, deprivation-weighted water consumption [2]

Disclaimer [2]

- The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ENVIRONMENTAL IMPACT per functional unit or declared unit (additional indicators A2)

	UNIT	A1	A2	A3	A1-A3
PM	Disease incidence	1.14E-7	1.36E-8	7.68E-10	1.29E-7
IRP	kBq U235 eq.	1.31E-1	9.65E-3	4.32E-4	1.41E-1
ETP-fw	CTUe	2.02E+1	2.05E+0	7.43E-1	2.30E+1
HTP-c	CTUh	2.50E-10	6.65E-11	1.89E-11	3.36E-10
HTP-nc	CTUh	8.26E-9	2.24E-9	7.88E-10	1.13E-8
SQP	---	4.06E+0	1.98E+0	4.75E-2	6.09E+0

PM = Potential incidence of disease due to PM emissions
IRP = Potential Human exposure efficiency relative to U235 [1]
ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]
HTP-c = Potential Comparative Toxic Unit for humans [2]
HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]
SQP = Potential soil quality index [2]

Disclaimer [1]

- This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Disclaimer [2]

- The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

RESOURCE USE per functional unit or declared unit (A1 / A2)

	UNIT	A1	A2	A3	A1-A3
PERE	MJ	2.90E-1	2.91E-2	2.55E-1	5.74E-1
PERM	MJ	0.00	0.00	0.00	0.00
PERT	MJ	2.90E-1	2.91E-2	2.55E-1	5.74E-1
PENRE	MJ	3.49E+1	2.44E+0	1.54E-1	3.75E+1
PENRM	MJ	0.00	0.00	0.00	0.00
PENRT	MJ	3.49E+1	2.44E+0	1.54E-1	3.75E+1
SM	kg	0.00	0.00	0.00	0.00
RSF	MJ	0.00	0.00	0.00	0.00
NRSF	MJ	0.00	0.00	0.00	0.00
FW	m3	3.78E-3	2.80E-4	2.48E-4	4.31E-3

PERE = Use of renewable energy excluding renewable primary energy resources
PERM = Use of renewable energy resources used as raw materials
PERT = Total use of renewable primary energy resources
PENRE = Use of non-renewable primary energy resources excluding non-renewable energy resources used as raw materials
PENRM = Use of non-renewable primary energy resources used as raw materials
PENRT = Total use of non-renewable primary energy resources
SM = Use of secondary materials
RSF = Use of renewable secondary fuels
NRSF = Use of non renewable secondary fuels
FW = Use of net fresh water

OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 / A2)

	UNIT	A1	A2	A3	A1-A3
HWD	kg	1.04E-5	5.79E-6	3.21E-6	1.94E-5
NHWD	kg	3.53E-2	1.45E-1	4.50E-3	1.84E-1
RWD	kg	2.11E-4	1.51E-5	4.06E-7	2.26E-4
CRU	kg	0.00	0.00	0.00	0.00
MFR	kg	0.00	0.00	0.00	0.00
MER	kg	0.00	0.00	0.00	0.00
EEE	MJ	0.00	0.00	0.00	0.00
ETE	MJ	0.00	0.00	0.00	0.00

HWD = Hazardous Waste Disposed
NHWD = Non Hazardous Waste Disposed
RWD = Radioactive Waste Disposed
CRU = Components for reuse
MFR = Materials for recycling
MER = Materials for energy recovery
EEE = Exported Electrical Energy
ETE = Exported Thermal Energy

BIOGENIC CARBON CONTENT per functional unit or declared unit (A1 / A2)

	UNIT	A1	A2	A3	A1-A3
BCCpr	kg C	0.00	0.00	0.00	0.00
BCCpa	kg C	0.00	0.00	0.00	0.00

BCCpr = Biogenic carbon content in product
BCCpa = Biogenic carbon content in packaging

CALCULATION RULES

Cut-off rules

All primary data of the production processes were considered, with the exception of paper bags due to an overall assumed weight of the packaging of less than 0.00001 kg.

Data quality

All data are measured or calculated from the current production process. The geographical scope of the study is determined by the production of the liquid black product at the Harold Scholz facilities in Germany. Input materials are mainly sourced from Europe. Therefore, an attempt was made to use German data sets for the respective processes and European data sets to represent the input materials. The process data used is based on information provided by Harold Scholz. With regard to the up-to-dateness of the process data used, it can be assumed that these reflect the current state of the art. The reference year 2021 was used as the basis for the process data collected. The background data used is mainly based on 2019 as the reference period.

Allocation

Information on the amount of energies and utilities needed for manufacturing the color was available on a batch level, per year. Allocation was done by dividing the overall consumption values per batch by the amount produced.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

• For all raw materials (A1), relevant datasets from Ecoinvent (v 3.6) haven been used;
• For IBC containers as packaging material, it was assumed that 60% of their weight mass are steel, the other 40% are plastics (polyethylene). It was assumed that one container can be used 8 times;
• For transportations via truck (A2), a standard utilization of 50% was assumed, lorry unspecified;
• For transportations via ship (A2), Standard container ship with a global average utilization of 43,000 DWT (deadweight tonnage), capacity utilization 70%, was assumed;
• For the electricity used during the production process (A3), a electricity from renewable sources was considered, based on certificates of origin provided by Harold Scholz' energy supplier, as well as electricity from Harold Scholz' own PV plant.

DECLARATION OF SVHC

The product does not contain substances on the ECHA list of substances of very high concern (SVHC).

REFERENCES

- DIN EN ISO 14020:2000, Environmental labels and declarations - General principles
- DIN EN ISO 14021: 2016, Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling)
- DIN EN ISO 14025:2011, Environmental labels and declarations - Type III environmental declarations - Principles and procedures
- Ecoinvent Database, Version 3.6, 2021
- EN 15804:2012-04+A1 2014, Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- General Programme Instructions of the International EPD® System. Version 3.0.
- International Energy Agency (IEA): 2020, Key energy statistics Germany, Energy supply – electricity by source; https://www.iea.org/countries/germany
- PCR 2012:01 Construction products and construction services (EN 15804:A1), version 2.4

REMARKS

None